Subject Index to Volume 9

Abetalipoproteinemia: apolipoprotein B deficiency disease 768
Acetaminophen: effect of glucose on toxicity of 240
Acetylcholinesterase: asymmetric, triple-helix motif in 1537
Acetyl CoA: content increased by insulin and ketone bodies 651
Acetyl-CoA carboxylase: inactivation by AMP-activated protein kinase 541
***N*-Acetyl-cysteine**
in amelioration of neuroimmunodegeneration 1147
effect on activity of NFκB 246
inhibition of programmed cell death 1282
vasoconstriction in response to 379
***N*-Acetylglucosamine transferase:** applications of cells lacking 1436
Acidic fibroblast growth factor: effect on growth of nasopharyngeal carcinoma cells 1211
Acid phosphatase: down-regulated in *C. elegans* mutant for gerontogenes 1355
Acridines: guide structures for design of TR inhibitors 1138
Acrophases: time-dependent distribution of 269
Actin: structure of 636
Actin fold
evolution of 173
protein structural motif 167
Activating transcription factor-2: required for cytokine induction of adhesion molecules 899
Activator protein-1: extracellular cysteine levels and 246
Activin: role in hepatic regeneration 1527
Actomyosin: structure and function 636
Actomyosin interaction: inhibition by troponin C 755
Acute-phase reaction: therapeutic potential of kallikrein inhibitors in 446
Acyl-CoA dehydrogenases: structure and mechanism of action 718
Acyl groups: mechanisms of transfer 1585
Adaptor proteins: in coated vesicle formation 1445
Adenosine
electrophysiological actions on cardiomyocytes 359
role in arrhythmias caused by hypoxia 387
Adenosine deaminase: structure of 497
A_1-Adenosine receptors: phosphorylation of 175
Adenoviral vectors: targeting for gene therapy 191
Adenoviruses: vascular gene transfer using 843
Adenylate cyclase
in inhibition by muscarinic receptors 619
triggering by anti-*T. cruzi* antibody binding 1482
Adenylyl cyclase
adenosine inhibition of 359
Gα interaction with 1059
inhibition mediated by opioid receptors 516
Adherence junctions: endothelial 910
Adhesion molecules: bioglues and signal transducers 611
β-Adrenergic receptor: ligand binding inhibited by anti-T. cruzi antibody 1482
β-Adrenergic receptor kinases: properties of 175
β-Adrenoreceptors: role in myocardial preconditioning 387
Affinity partitioning: membrane purification by 1304
African sleeping sickness: structure-based drug development for 1138
Aggregation model: for complement activation 101
Aging
brain oxidative processes and antioxidative defenses in 526
existence of genes for 284
role of chaperones in 371
role of monoamine oxidases in 605
AICAR: stimulation of AMP-activated protein kinase 541
AIDS: CNS, immune-nervous system interactions in 611
AIDS dementia complex: cytokine effects in 1577
Aldose reductase: structure of 497
Aldosterone: effect on renal microvascular development 963
Alkaline phosphatase: activity lowered in *C. elegans* mutant for gerontoenes 1355
Alkaline proteases: β roll fold of 335
Allosteric control: pathway revealed by hemoglobin intermediate states 210
Allosteric model: for complement activation 101
α/α coiled fold 335
α/β barrel proteins: structure and evolution of 497
Alport's syndrome: associated with mutations in triple helices 1537
Alveolar macrophages: effects of ethanol on 253
Alzheimer's disease
immune-nervous system interactions in 611
paired helical filament tau in 1570
role of β-amyloid protein in 366
role of chaperones in 371
Amino acids
expression on protein surfaces 87
frequencies found in omega loops 710
Amino acid sequences: of G-protein-coupled receptors 745
γ-Aminobutyric acid: coordinated with glutamate in regulation of hormone secretion 686
AMPA: in pancreatic islet cells 686
AMPA receptors
effects of anesthetics on 1454
and transduction 343
Amphibians: freeze avoidance in 351
Amplitude/mesor ratios: time-dependent distribution of 269
Amyloid precursor protein: processing pathways 366
β-Amyloid protein: role in Alzheimer's disease 366
Analgesia: magnetic field effects on opioid-induced 807
Anatomical images: accurate, database of 434
Anchors: secondary, in peptide binding 33
Anemia: therapeutic potential of kallikrein inhibitors in 446
Anesthetics: actions on ligand-gated ion channels 1454
Angina: nitrovasodilators in treatment of 1321
Angiogenesis: molecular mechanisms of 919
Angioplasty: restenosis after 1336
Angiotensin: role in hypoxia 183
Angiotensin-converting enzymes
marker for endothelial cells 928
and skin microvascular blood flow 411
Angiotensin II
function and structural studies 43
and skin microvascular blood flow 411
Antheraxanthin: in the xanthophyll cycle 1547
Antibodies
in affinity partitioning 1304
anti-HIV, conformational transitions in 127
anti-idiotypic 43
anti-*T. cruzi*, effect on myocardium 1482
global movements in 101
identification of specificity-determining residues in 133
structural features of reactions with antigens 9
xenogeneic, reduction of immunogenicity of 133
Antibody paratopes: properties of surfaces of 87
Anti-cholera toxin peptide antibody: interactions in binding site region of Fab fragment 120
Anti-feline infectious peritonitis virus: molecular mimicry in 43
Antifreeze proteins: biosynthesis of 351
Antigen-antibody interactions: variability of 41
Antigenic epitope: associated with class I molecules 26
Antigenic peptides: structured conformations of 37
Antigenic surfaces: of proteins, analysis of 87
Antigen presenting cells: expression of class II antigens in 1429
Antigens: structural features of reactions with antibodies 9
Anti-idiotypic antibodies: biological function and structural studies 43
Anti-idiotypic Fab: against feline peritonitis virus-neutralizing antibody 107
Anti-Jo-1 antibody: binding to histidyl-tRNA synthetase 1226
Anti-lysozyme system 46
Antioxidants
in amelioration of neuroimmunodegeneration 1147
carotenoids as 1551
inhibition of programmed cell death 1282
Antioxidative defense mechanisms: in the aging brain 526
Antisense oligodeoxynucleotides: in characterization of opioid drug selectivity 521
Antisense oligonucleotides
inhibition of collagenase I expression in fibroblasts 1371
modulation of mammalian gene expression 1288
in strategies to inhibit gene expression 848
Aortic aneurysms: associated with mutations in triple helices 1537
Apocytochrome b562: mobility in 1013
Apolipoprotein B: production by Caco-2 cells 626
Apolipoprotein mutants: physiological significance of 768
Apolipoproteins: importance of forces in the conformation of 535
AP-1-responsive promoters: NO and cGMP analogs activate transcription from 552
Apoprotein: sequence similarity to plasminogen 939
Apoptosis
biochemistry of 1277

DNases associated with 665
endothelial 928
inhibited in irradiated MOLT-4 cells by trolox 1345
in neurodegenerative disorders 616
role of calcium in 219
Arabinogalactan proteins: in plant development 1004
Arachidonic acid
conversion to thromboxane and prostaglandins 1051
linked to long-term potentiation 343
L-Arginine
formation of nitric oxide from 1319
vasoconstrictive response to 379
Arginine analogs: in amelioration of neuroimmunodegeneration 1147
Arginine vasopressin: effects of neonatal estrogenization on 419
Arginyl: proline-directed cleavage of 736
Arteries: effect of hypoxia in systemic and pulmonary 183
Arthritis
role of chaperones in 371
therapeutic potential of kallikrein inhibitors in 446
Ascorbic acid: vasoconstriction in response to 379
Asialoglycoproteins: in retroviral vector targeting 191
Asilomar: 20 years on 295 (Editorial)
Aspartate: decreased by insulin and ketone bodies 651
Aspartylglycosaminuria: recombinant glycosylasparaginase and correction of 428
Astaxanthin: binding by protein 1551
Astrocytes
in glutamate neurotransmission 343
HIV gp120 effects on 1577
modulation of response to nerve injury 1605
in neuroimmunodegeneration syndromes 1147
Astroglia: cell volume and glutamate-induced swelling of 343
Ataxia telangiectasia: pathways for neuron and T cell loss in 1147
Atherogenesis: transgenic rabbit model of 1623
Atherosclerosis
model of 15-lipoxygenase overexpression in 1623
plasminogen/plasmin system in 934
role of LDL receptor-related protein in 890
use of gene transfer to study 849
ATP
and effects of shear on endothelial cell calcium 968
mechanism of hydrolysis 167
synthesis efficiency decreased in BHE/cdb rats 1638
ATP synthase: from human serum albumin to rotational catalysis 559
Atrioventricular node: response to adenosine 359
Atrium: response to adenosine 359
Autoantibodies: in idiopathic myositis 1226
Autoimmune disorders: aberrant expression of class II molecules in 1429
Axons: navigation in the visual system 329
Axotomy: recovery after 1605
AZT: use of during pregnancy 1157

Bacteria
oral and intestinal, effects of amalgam mercury on 504
proline motifs as targets for 736
Bacterial enterotoxins: mimicry by guanylin 643
Bacteriophage DNA: modified nucleotides in 1034
Bare lymphocyte syndrome: lack of class II gene expression in 1429
Basement membranes
in the liver 1401
stimulation of T cell migration through 1473
Basic fibroblast growth factor
effect on renal microvascular development 963
inhibition of growth of nasopharyngeal carcinoma cells 1211
B cells: expression of class II antigens in 1429
BCL-2: pathologies caused by overexpression of 1277
β-barrel proteins: up-and-down 566 (Letter)
β roll 335
BHK-21 cells: inositol-triphosphate-sensitive calcium store in 788
Binding sites: on antibodies 9
Biochemistry: fifty years ago 1497
Biomechanical stress: sensitivity of osteocytes to 441
Biomedical research: cost savings from 837
Biomedical scientist: education of 1392
Blood-brain barrier 931
Blood flow: vascular adaptations to 874
Blood impurities: Fvs in binding and removal of 74
Body temperature: role of interleukin-6 in regulating 659
Bohr effect 217
Bone: mechanosensitive cells in 441
Bone cells: NO production in response to mechanical strain 1614
Bone marrow: circannual rhythm in DNA synthesis in 397
Bone marrow monocytes: proliferation inhibited by c-*myb* antisense oligonucleotides 1291
Bone morphometric proteins: in the developing nervous system 613
Bradyarrhythmias: associated with adenosine 359
Bradykinin: skin microvascular blood flow increased by 411
Brain
aging, oxidative processes and antioxidative defenses of 526
development, expression of inducible NOS during 1632
homeostasis, immune-nervous system interactions in 611
melatonin reduction of lipid peroxidation in 1205
Branched-chain α-keto acid dehydrogenase complex: gene regulation and genetic defects in 1164
Breast cancer
role of chaperones in 371
trial use of swainsonine as treatment in 1436
Brewer's yeast: old yellow enzyme from 1518
Brownian dynamics: simulation of antibody-antigen system 14
Brush border membrane vesicles: effect of zinc on substrate uptake into 1112
Burnet, Macfarlane: role in clonal selection theory 164
t-Butyl hydroperoxide: induction of programmed cell death 1281

Caco-2 cells: model for intestinal lipoprotein synthesis 626
Cadherin-5: marker for endothelial cells 928
Caenorhabditis elegans
gerontogenes determine metabolic rate potential in 1355
normal cell death in 1277
Ras effectors in 1312
slowing of aging in 284
Calcineurin: in immunosuppression 63
Calcitic sponge spicules: morphogenesis of 262
Calcium
in apolipoprotein B synthesis and secretion 626
cytosolic, increased by glutamate 815
effects of muscarinic receptor stimulation on 619
endothelial, effects of shear on 968
glutamate-mediated increases in 343
in inositol-triphosphate-sensitive stores 788
oscillations and waves, mechanisms of 1463
in protein C activation 952
radiation-induced uptake blocked by trolox 1345
in regulation of nitric oxide synthase activity 799
regulation through signaling cross-talk 1297
roles in cell injury and cell death 219
signaling, endothelin receptors and 1196
and troponin in muscle contraction 755
Calcium channels
Gα interaction with 1059
in hypoxic pulmonary vasoconstriction 183
Calcium pumps: subcellular targeting of 670
Calmodulin: in regulation of CK2 313
cAMP-dependent protein kinase: comparison with insulin receptor kinase 1255
Captopril: skin microvascular blood flow increased by 411
Carbohydrate-deficient glycoprotein syndromes: glycosyltransferase deficiency in 1436
Carbohydrates: use of Gly-T mutants in identifying functions for 1436
Carbon tetrachloride: effect of glucose on toxicity of 240
Carcinogenesis: role of calcium in 219
Cardiomyocytes: electrophysiological actions of adenosine on 359
Cardiovascular conditions: treated with NO donors 1321
β,β-Carotene: reaction with peroxy radicals 1551
β-Carotene: isoforms of 1547
Carotenoids
effects on human health 1549
important physiologic modulators 1547
structure and properties in relation to function 1551
Carotid denudation: smooth muscle cell proliferation after 1336
Casein kinase II: multiple substrates and puzzling regulation 313
Catalase
activity higher in worms mutant for gerontogenes 1355
effect on nitric oxide-related vasoconstriction 379
Cataract: oxidative stress induced 1173
Catecholamines
adenosine antagonism of 359
possible role in myocardial preconditioning 387
CD4: structural view 17
CD4⁺ T cells
melatonin binding by 1331
preferential expression of CD30 by 81
CD8: structural view 17
CD30: expression by CD4⁺ T cells producing Th2-type cytokines 81
Cell biology: time dimension in 1234
Cell cycle: role of MAPK signaling cascade in 726
Cell replication: in vivo model of 1396

Cellular retinol-binding proteins: structural determinants important for function 229
Central nervous system
disease, immune-nervous system interactions in 611
effects of amalgam mercury on 504
pattern of postnatal nitric oxide synthase induction in 799
role of monoamine oxidases in 605
roles of TNF-α and IFN-γ in 1577
Cepaea nemoralis: magnetic field effects on opioid-induced responses in 807
c-*fos*: expression increased by NO and cGMP analogs 552
CFTR: a cAMP-regulated chloride channel 511
Chagas' disease
role of antibodies in pathogenesis of 1482
structure-based drug development for 1138
Chaperones
role in biogenesis and maintenance of the mitochondrion 371
role in protein folding 1559
Chaperonins: role in protein folding 1559
Chemokines
activities regulated by glycosylation 453
α and β, three-dimensional structures 57
Chemotherapeutic strategies: consideration of time of day and time of year in 397
Chimeras: of endoplasmic reticulum and plasma membrane calcium pumps 670
Chlamydomonas: modified DNA bases in 1034
Chloride channels: a state of flux 509
Chloroform: effect of glucose on toxicity of 240
Chlorophyll: carotenoid transfer of energy to 1547
Cholesterol
homeostasis, role of the LDL receptor 1378
metabolism in Caco-2 cells 626
synthesis inhibited by stimulation of AMP-activated protein kinase 541
Chondrodysplasias: associated with mutations in triple helices 1537
Chondroitin sulfate: in function of thrombomodulin 946
Chromatin: structure and *GAL* gene expression 777
Chromium
accumulation in humans from dietary supplements 1649
genotoxicity of 1651
Chromium chloride hexahydrate: effects in CHO cells 1643
Chromium nicotinate: effects in CHO cells 1643
Chromium picolinate
calculation of chromium accumulation from 1649
production of chromosome damage in CHO cells 1643
ClC family of chloride channels 511
Circadian rhythm in cell proliferation 397
Circannual rhythm in DNA synthesis 397
Cirrhosis: role of entactin and laminin in 1401
c-Jun: protein substrate of CK2 313
Class II transactivator CIITA: in MHC class II expression 1429
***Clathrina* triradiate spicule:** textural characteristics 262
Clathrin coat: recycling of constituents 1449
Clathrin-coated vesicles: mechanism of formation 1445
Clonal selection theory: case study for evaluation in science 164
c-Myb: protein substrate of CK2 313
c-Myc: regulation of hepatic glycolysis 1067
c-*myc*: expression inhibited by antisense oligonucleotides 1292
Coagulation
factor Xa in 860
inhibition by thrombomodulin 946
proline in peptides interfering in 736
Coagulation complexes: structure of 949
Coagulation pathway: tissue factor function in 852
Coated vesicles: diversity of form and function 1445
Coatomer: coated vesicle assembly unit 1445
Coat proteins: major classes of 1445
Cofactor: tissue factor function as 852
Cold-water marine fishes: freeze avoidance in 351
Collagenase type I: inhibited in fibroblasts by antisense oligonucleotides 1371
Collagens
in hepatic regeneration 1401
triple-helix motif in 1537
Collectins: triple-helix motif in 1537
Colony-stimulating factors: in the developing nervous system 613
Comitogens: hepatic growth factors 1396
Complement activation: mechanisms for 101
Complementarity: antigen-antibody 9
Complementarity-determining regions
in antibody binding of antigen 9
new boundaries for 133
surface amino acids of 87
Complexation: intramolecular signaling upon 101
Computer simulation: of antibody-antigen docking 13
Concanavalin A: response of silicone implant patients to 424
C1q: triple-helix motif in 1537
Connective tissue diseases: mutations in triple helices and 1537
Contact system activation: role in rat model of acute inflammation 446
Cooperativity: hemoglobin, energetics of 210
COP-coated vesicles: formation of 1445
COPII-coated vesicles: formation of 1445
Copper: stimulation of the oligopeptide/H^+ symporter 1112
Corticosterone: gender-specific differences in secretion of 419
Corticotropin-releasing hormone: gender-specific differences in expression of 419
Cross-linking
in design of antisense oligonucleotides 1371
of interleukin-2 1096
Cross-reactivity: of antibodies with antigens 9
Cross-talk: in second messenger-generating systems 1297
Cryomedicine: vertebrate antifreeze proteins in 355
Cryoprotection: mitigating freezing and thawing stresses 354
Crystals: proteins interacting with 262
CTLL2 cells: deoxyribonuclease induction in 665
Cyanomet: a good oxygen analog? 216
Cyclic AMP: levels increased on anti-*T. cruzi* antibody binding 1482
Cyclic GMP: levels increased on anti-*T. cruzi* antibody binding 1482
Cyclic GMP analogs: activation of transcription of reporter genes 552
Cyclin-dependent kinases: analogy with CK2 313
Cyclobutane pyrimidine dimers: introduced into DNA by UV treatment 1043
Cyclooxygenases
involved in conversion of arachidonic acid 1051
and skin microvascular blood flow 411
Cyclophilins: three-dimensional structure and actions of 63
Cyclosporin A: complexes with cyclophilins 63
Cysteine: modulation of NFκB activity 246
Cysteine-rich domains: structure of 603
Cystic fibrosis: potential of recombinant CFTR in 513
Cytochrome *c*: structural changes in binding to antibody 13
Cytochrome C551: importance of forces in the conformation of 535
Cytokines
activities regulated by glycosylation 453
α + β family 55
amino terminal X-Pro shield in 736
helical 53
heterogeneity of 453
imbalanced signaling in neuroimmunodegeneration 1147
induction of expression of class II molecules 1429
interactions in CNS disease 611
modulation of plasminogen receptors 939
role in hepatic regeneration 1527
roles in brain 611
and their receptor complexes 50
tissue factor gene induction by 883
Cytoskeletal changes: role of calcium in 219
Cytotoxic response: phagocytic secretory products in 200
Cytotoxic T lymphocytes: apoptotic, deoxyribonuclease induction in 665

ddC: use of during pregnancy 1157
ddI: use of during pregnancy 1157
"Death programs": in programmed cell death 1277
Deer mice: hantavirus and 1247
Deleted in oral cancer-1 (*doc-1*): an oral tumor suppressor gene 1362
Dementia
AIDS, cytokine effects in 1577
correlation with neurofibrillary lesions in AD 1570
Dental amalgam: mercury exposure from 504
Deoxyribonuclease: induction in apoptotic cytotoxic T lymphocytes 665
Depolymerase amylo-chain reaction 1118
L-Deprenyl: monoamine oxidase inhibitor 605
Development
brain, expression of inducible NOS during 1632
immune and nervous system interactions in 611
role of MAPK signaling cascade in 726
Developmental patterning: documentation by video time-lapse microscopy 324
Dextran: in affinity partitioning 1304
Diabetes
role of chaperones in 371
type II, role of moderate ketosis in 651
Diabetes-prone BHE/cdb rats: point mutation in mitochondrial DNA of 1638
Diacylglycerol: phospholipase C and generation of 484
2'3'-Didehydro-3'-deoxythymidine: use of during pregnancy 1157
Dideoxynucleosides: developmental pharmacology and toxicology of 1157
Dietary supplements
chromium accumulation in humans from 1649

chromium complexes in 1643
Differentiation: role of MAPK signaling cascade in 726
Digoxin: Fvs in binding and removal of 74
Dihydrocytochalasin B: induction of neutrophil integrin expression 1103
Dihydropyridines: effect on glutamate-associated calcium increase 815
Dimethylmaleate: proapoptotic effect of 1281
Dimethyl sulfoxide: inhibition of programmed cell death 1282
Distortive model: for complement activation 101
DNA
circannual rhythm in synthesis of 397
damage concurrent with cataract formation 1173
fragmentation in apoptotic CTLL2 cells 665
fragmentation in irradiated cells blocked by trolox 1345
hypermodified bases in 1034
interaction of zinc fingers with 597
mechanisms of damage recognition in 1043
mutation in diabetes-prone BHE/cdb rats 1638
repair, RNA polymerase II and 1424
strand breaks, role of calcium in 219
DNA binding proteins: as MHC class II gene promoters 1429
Docking: computer-aided modeling of 13
D-peptide analog: of IGF-1 inhibits smooth muscle cell proliferation 1336
Drosophila melanogaster
Ras effectors in 1312
slowing of aging in 284
Drug design: trypanothione reductase and lipoamide dehydrogenase targets 1138
DTPA: inhibition of dipeptide uptake 1112
Dynamin: a GTPase required for clathrin-coated vesicle formation 1445

Eating
how to survive the perils of 991 (Editorial)
the perils of 1500 (Letter)
Ectotherms: vertebrate, survival mechanisms of 351
Editorial
Answering hard questions; asking for more! 159
Asilomar: 20 years on 295
Breaking through 1243
Genetics, ethics, and human values 699
How is Europe preparing for life sciences in the 21st century? 829
How to survive the perils of eating 991
Publish *and* perish! 1389
Simplify indirect costs on NIH grants 1123
The care and feeding of structural biologists 1
The other AIDS crisis 467
Toward public understanding of science 1507
Whether the identity of peer reviewers should be secret 571
Effector cell protease receptor-1: factor Xa receptor 860
Ehlers Danlos syndrome type IV: associated with mutations in triple helices 1537
Ehrlich, Paul: role in clonal selection theory 164
Eicosanoid mediators: in normal physiology and human diseases 1051
Eicosanoids: stimulation of T cell migration by 1473
Elastin: in hepatic regeneration 1401
Electron transfer: phthalate dioxygenase reductase model for 1411
Electron transferases: structure and mechanism 473
Elongation complex: RNA polymerase II 1419
Elongins: transcription factors that regulate elongation 1424
Endoplasmic reticulum calcium pumps: chimeras of 670
Endothelial cell adhesion molecules: transcriptional regulation of 899
Endothelial cell-to-cell junctions 910
Endothelial cells
embryonic origin 926
growth rate increased by HSP27 1079
heterogeneity of 929
Endothelial genes: expression regulated by hemodynamic forces 874
Endothelin receptors: and calcium signaling 1196
Endothelium: differentiation of 926
Enhancers: cytokine inducible 899
Enolase: structure related to α/β barrels 497
Entactin: role in the outcome of liver injury 1401
***Env*:** engineering for gene therapy 191
Enzyme replacement therapy: with glycosylasparaginase 428
Enzymes: with α/β barrel domains 497
Epidermal growth factor
elevation after carotid denudation 1336
role in hepatic regeneration 1527
Epidermolysis bullosa: associated with mutations in triple helices 1537
Epididymal retinoic acid-binding protein: structural determinants 229
Epithelial cells: death in cataract formation 1173
Epithelium: guanylin regulation of transport in 643
Erythropoietic protoporphyria: carotenoids in treatment of 1547
Erythropoietin: amino terminal X-Pro shield in 736

***Escherichia coli*:** mechanism and structure of thioredoxin reductase from 1267
E-selectin
structure and function 866
transcriptional regulation of 899
E-selectin enhancer: model for 899
Estradiol
gender-specific differences in responses to 419
increased HSP27 levels and cell growth rate 1079
Estrogen receptors
membrane localization of 404
mRNA levels in tumor xenografts 279
Estrogens: and gender-specific differences in HPA function 419
Ethanol: suppression of nitric oxide and TNF-α in rat lung 253
Eukaryotes
modified DNA bases in 1034
Ras effectors in 1312
Eukaryotic protein kinase superfamily 576
Evaluation in science: clonal selection theory as case study for 164
Evolution
of α/β barrel proteins 497
artificial, and natural ribozymes 1183
molecular, antigenic surfaces of proteins and 87
Exercise training: and proportions of muscle fiber types 1091
Extensins: in plant development 1004
Extracellular matrix: in hepatic regeneration 1401
Extremely low frequency magnetic fields: mechanisms of effects on opioid function 807

Fab
against feline peritonitis virus-neutralizing antibody 107
binding site interactions in 120
ligand-induced conformational changes in 102
Factor Xa
cellular binding sites for 862
structure, function, and EPR-1 receptor 860
Factor XI: thrombomodulin and activation of 954
Fasting: prolonged, role of moderate ketosis in 651
Fatty acid oxidation disorders: acyl-CoA dehydrogenase deficiencies in 718
Fatty acids
acetyl group in metabolism of 820
synthesis inhibited by stimulation of AMP-activated protein kinase 541
uptake by Caco-2 cells 626
Fcγ receptors: recognition of IgG by 115
Feline peritonitis virus-neutralizing antibody: anti-idiotypic Fab against 107
Ferredoxin NADP$^+$ reductase: binding sites in 1411
Fever: elicited by administration of interleukin-6 659
FGFR-1: mediation of growth inhibition of nasopharyngeal carcinoma 1211
Fiber types: genetic determinism of proportion in skeletal muscle 1091
Fibroblast growth factor: β trefoil structure 52
Fibroblast growth factor-2: in regulation of muscle regulatory factors 1595
Fibroblast growth factors
effect on growth of nasopharyngeal carcinoma cells 1211
pathways for secretion and signaling by 919
Fibroblasts
inhibition of collagenase I expression in 1371
internal calcium store in 788
Fibronectins: in hepatic regeneration 1401
Ficolin: triple-helix motif in 1537
FK506-binding proteins: three-dimensional structure and actions of 63
Flavins: artificial, utility of 474
Flavocytochromes: structure and mechanism of 473
Flavoenzymes: stereochemistry of reactions of 474
Flavoprotein-disulfide oxidoreductases: structure and mechanism of 473
Flavoproteins
interaction with acyl-CoA dehydrogenases 718
old yellow enzyme of yeast 1518
structure and mechanism 473
Fluid mechanical model systems 875
fMLP: neutrophil adhesion induced by 1103
Foldases: chaperones as 371
Folding: *see* Protein folding
Folds: coiled 335
Food intake: role of interleukin-6 in regulating 659
Four-helix bundle motif 1013
Free radicals
in age-related destruction of neuronal tissue 526
and phagocytic cells 200
scavenging by melatonin 1205
use of fluorophore-containing spin traps to localize 1085
Freeze tolerance: of vertebrate ectotherms 351
Fusion protein: PDFGR-IgG 140

Fvs: single chain 73

GABA;IA receptors: effects of anesthetics on 1454
Galactose: effect on *GAL* gene expression 777
β-Galactosidase: structure related to α/β barrels 497
***GAL* gene family:** transcriptional regulation in 777
GAL-4: zinc fingers of 602
Gap junctions: endothelial 910
GATA-1: structure of 601
Gaucher's disease: GlcNAc-TI mutants in therapy of 1436
Gene expression
modulated by antisense oligonucleotides 1292
oligonucleotide-mediated modulation of 1288
Genes: involved in DNA damage recognition 1044
Gene targeting: of the plasminogen/plasmin system 934
Gene therapy
targeted vectors for 191
for vascular disease 843
Genetic diseases: acyl-CoA dehydrogenase deficiencies in 718
Genetics, ethics, and human values 699 (Editorial)
Gene transfer: methods of 843
Gene transfer studies: of the plasminogen/plasmin system 934
Gerontogenes
determine metabolic rate potential in aging *C. elegans* 1355
real or virtual? 284
GH_3)/B6 tumor cells: membrane estrogen receptor of 404
GH_3 cells: glutamate increases cytosolic calcium in 815
Glial cells
gene expression, effect of signaling pathways on 1577
in health and disease 611
Glucagon receptor: calcium-mobilizing actions of 1297
β-Glucanases: structure of 497
Glucocerebrosidase: GlcNAc-TI mutants and optimal synthesis of 1436
Glucocorticoid receptors
gender-specific differences in expression of 419
zinc finger motif of 597
Glucokinase: increased expression in hepatic glycolysis 1067
Glucose
blood, affected by liver glucose metabolism 1067
effect on outcome of liver injury 240
in *GAL* gene regulation 777
β-D-Glucosyl-hydroxymethyluracil: hypermodified DNA base 1034
Glutamate
coordinated with GABA in regulation of hormone secretion 686
high-affinity transporter of 815
neurotransmission, astrocytes in 343
transport increases cytosolic calcium 815
Glutamate antagonist: in amelioration of neuroimmunodegeneration 1147
Glutamate receptors: ionotropic, in pancreatic islet cells 686
Glutathione
mimic prevents cataract formation in organ culture 1173
modulation of NFκB activity 246
significance in mercury exposure from dental amalgam 504
Glutathione peroxidase
inhibition of programmed cell death 1282
stimulation by melatonin 526
Glutathione reductase: pathway of reducing equivalents in catalysis by 1267
Glyceraldehyde-3-phosphate dehydrogenase: mRNA levels in tumor xenografts 279
Glycerol
effect on *GAL* gene expression/regulation 777
in freeze avoidance by rainbow smelt 351
Glycerol kinase: structural similarity to actin 167
Glycine: incorporation blocked by IGF-1 analog 1336
Glycine receptors: effects of anesthetics on 1454
Glycobiology: Glyc-T mutants key to new insights in 1436
Glycogen: biogenesis of 1126
Glycogenin: in glycogen biogenesis 1126
Glycogen synthase: phosphorylation/dephosphorylation regulation of 1126
Glycolysis: hepatic, c-Myc regulation of 1067
Glycolytic enzymes: and insulin sensitivity in obesity 273
Glycopeptides: antifreeze proteins of fishes 351
Glycoproteins
in hepatic regeneration 1401
in plant development 1004
Glycosylasparaginase: recombinant, and correction of aspartylglycosaminuria 428
Glycosylation: cytokine activities regulated by 453
Glycosyltransferase: mutants provide new insights in glycobiology 1436
Glycylsarcosine: uptake in SKPT-0193 cells 1489
Gonadal steroids: and male-female differences in adrenocortical secretion 419
G protein-associated receptors: eicosanoids mediated by 1051
G protein-coupled receptor kinases: desensitization of G protein-coupled receptors 175
G-protein-coupled receptors: family of 745
G-proteins
heterotrimeric, structure-function relationships of 1059
in muscarinic receptor signaling 619
in regulation of calcium through signaling cross-talk 1297
Granulocyte colony-stimulating factor: flexible loops in 1013
Granulocyte-macrophage colony-stimulating factor: amino terminal X-Pro shield in 736
Grass sensitivity: $CD4^+CD30^+$ T cells isolated in 81
GRK4, GRK5, and GRK6: properties of 175
GroEL: bacterial chaperonin, structure and function 1559
Growth factors
amino terminal X-Pro shield in 736
cystine knot 50
hepatic 1396
role in hepatic regeneration 1527
Growth hormone receptor: similarity to tissue factor 852
GTPase: activity of G-proeins 1059
GTP-binding proteins: role in AP2 recruitment 1450
Guanylate cyclase
activation by hydrogen peroxide 187
in the L-arginine:NO pathway 1319
structure and activity 643
Guanylin: a peptide regulator of epithelial transport 643

Hammerhead ribozyme: gene modulation by 1293
Hantavirus: elusive origin of 1247
Heat shock: signaling pathways initiated by 726
Heavy metal exposure: Fvs in treatment for 74
Helicases: in DNA damage recognition 1043
Heme-containing flavoproteins: structure and mechanism of 473
Hemodynamic forces: regulators of endothelial gene expression 874
Hemoglobin: pathway of allosteric control revealed by 210
Hemolysate: in nitric oxide-related vasoconstriction 379
Hemostasis: plasminogen/plasmin system in 934
Heparan sulfate proteoglycans: involved in astrocyte migration 1605
Heparitinase: abolition of bFGF binding and growth inhibition 1211
Hepatic regeneration 1396
role of growth factors and cytokines in 1527
Hepatocyte growth factor: role in hepatic regeneration 1527
Hepatogenesis: similarity to liver regeneration 1401
Hepatotoxicants: effect of glucose on liver injury by 240
HepG2 cells: saporin-transferrin conjugate cytotoxic to 1220
Hereditary cerebral hemorrhage with amyloid: amyloid precursor protein mutations in 366
HER-2/*neu* oncogene: targeted by triplex-forming oligonucleotide 1288
Hexasaccharide: and Fc receptor recognition of IgG 115
Hexokinase: structural similarity to actin 167
Hibernation proteins: triple-helix motif in 1537
High-density lipoproteins: deficiency associated with mutations in the apoA-I gene 768
Histamine: role in hypoxia 183
Histidyl-tRNA synthetase: a stimulating antigen in idiopathic myositis 1226
HIV
attempts to produce vectors from 191
nucleocapsid protein of 603
HIV gp120
activation of the CNS 1577
binding to and anti-V3 loop antibody 127
peptides from 40
HIV infection
pediatric, pathways for neuron and T cell loss in 1147
therapy of during pregnancy 1157
HIV viral proteins: comparable to cytokines in CNS activation 1577
Homeostasis
brain, immune and nervous system interactions in 611
genes involved in 284
role of chaperones in 371
H^+/peptide cotransporter: renal cell line constitutively expressing 1489
H-*ras* oncogene: targeted by triplex-forming oligonucleotide 1288
Hsc70: structural similarity to actin 167
HSP27: and endothelial cell growth 1079
Hsp70: class of molecular chaperones 1559
$5HT_3$ receptors: effects of anesthetics on 1454
Human chorionic gonadotropin: structure of 50
Humanization protocols: specificity-determining residues and 133
Hydrogen peroxide
elevation in lens from cataract patients 1173
formation by cellular systems 200
induction of programmed cell death 1281
role in plant development 1004
Hydrolytic enzymes: role of calcium in activation of 219

Hydrophobic effect: in protein folding 535
Hydrostatic compression: sensitivity of osteocytes to 441
4-Hydroxyalkenals: levels in brain tissue treated with kainate 1205
para-Hydroxybenzoate hydroxylase: structure and mechanism of 476
Hydroxyl radicals
cataract formation in organ culture caused by 1173
produced by phagocytic cells 200
3-Hydroxy-3-methyl-glutaryl-CoA reductase: inactivation by AMP-activated protein kinase 541
Hydroxyproline-rich glycoproteins: in plant development 1004
3α-Hydroxysteroid dehydrogenase: structure of 497
Hyperglycemia: in freeze avoidance by killifish 351
Hyperlipoproteinemia: apolipoprotein E mutants associated with 768
Hypobetalipoproteinemia: apolipoprotein B deficiency disease 768
Hypohalous acid: produced by phagocytic cells 200
Hypothalamo-pituitary-adrenal regulation: role of estrogens in gender-specific differences in 419
Hypoxia: ventricular arrhythmias caused by repeat exposure to 387
Hypoxic pulmonary vasoconstriction: mechanism of 183

I cell disease: glycosyltransferase deficiency in 1436
Ice nucleation in body fluids 351
Idiotypes: structure of 9
Immediate-early gene response: in regenerating liver 1396
Immediate-early response genes: induction by shear stress 879
Immune system
effects of amalgam mercury on 504
interactions with nervous system 611
Immunity
clonal selection theory of 164
eicosanoid mediators of 1051
Immunoglobulin G
PDGFR fusion protein 140
recognition by Fcγ receptors 115
Immunoglobulins: surface amino acids of 87
Immunomodulation: proline in peptides interfering in 736
Immunophilins: three-dimensional structure and actions of 63
Immunosuppressants: three-dimensional structure and actions of 63
Immunotherapeutic strategies: consideration of time of day and time of year in 397
Induced fit
in antibody-protein antigen reactions 9
mechanism for binding of hapten 103
supported by anti-idiotypic and complexed Fabs 107
Inducible nitric oxide synthase: down-regulation by ethanol 253
Inflammation
factor Xa in 860
phagocyte-derived free radicals in 200
regulation by selectins 866
selectins in 866
therapeutic potential of kallikrein inhibitors in 446
Inheritance: of muscle fiber type in humans 1091
Inhibitors: hepatic growth factors 1396
Inositol triphosphate
effect on calcium store in fibroblasts 788
generation on binding of ET-1 to ET;iA 1196
Inositol 1,4,5-trisphosphate: calcium oscillations dependent on 1463
Insulin
affected by liver glucose metabolism 1067
and mitochondrial energy transduction 651
secretion stimulated by kainate and AMPA 686
sensitivity in obesity 273
Insulin-like growth factor-1: D-peptide analog inhibits smooth muscle cell proliferation 1336
Insulin receptor: activation of catalytic activity of 1262
Insulin receptor protein-tyrosine kinase: provides insights into the eukaryotic protein kinases 1255
β1-Integrin: expression by human neutrophils 1103
Intercellular adhesion molecule-1
expression and inducibility 956
transcriptional regulation of 899
Interferon-β gene promoter: model for 899
Interferon-γ
induction of class II antigens by 1429
production by T cells stimulated with PPD 81
signaling pathways, effects on glial cells 1577
Interferons: activities regulated by glycosylation 453
Interleukin-1: β trefoil structure 52
Interleukin-1β: induction of adhesion molecule transcription 899
Interleukin-2
binding to its receptor 1096
DNase activity in cells deprived of 665
Fvs in delivery of 74
radioiodinated versus unsubstituted 1096
Interleukin-4
flexible loops in 1013
production related to CD30 expression 81
stimulation of class II expression 1429
Interleukin-5: production related to CD30 expression 81
Interleukin-6: effects augmented by soluble IL-6 receptor 659
Interleukin-6 receptor: augments central effects of interleukin-6 659
Interleukin-8
neutrophil adhesion induced by 1103
three-dimensional structure 57
Interleukins
activities regulated by glycosylation 453
amino terminal X-Pro shield in 736
in brain 613
Internet: resources available on 5
Ion channels
actions of anesthetics on 1454
endothelin and 1196
Ion fluxes: alterations during apoptosis 1284
Ionophors: signaling pathways initiated by 726
Ionotropic receptors: and transduction 343
Ion paramagnetic resonance model: predicts magnetic field parameters that affect nerve cells 547
Iron: and phagocyte hydroxyl radical production 200
Iron-sulfur flavoprotein: model for study of electron transfer 1411
Ischemia: role of chaperones in 371
Isocitrate dehydrogenase: activity higher in worms mutant for gerontogenes 1355
Isocitrate lyase: activity higher in worms mutant for gerontogenes 1355
Ito cells: in hepatic regeneration 1401

Janus genes: regulation of cell proliferation and apoptosis 1277
Jerne, Niels: role in clonal selection theory 164
Jun B: expression increased by NO and cGMP analogs 552
Junctions: endothelial intercellular 910

Kainate: in pancreatic islet cells 686
Kainate receptors
effects of anesthetics on 1454
and transduction 343
Kainic acid: melatonin protection against oxidative damage by 1205
Kallikrein
inhibition prevents peptidoglycan-induced arthritis 446
specific inhibitor of 446
α-Keto acid dehydrogenase complexes: gene regulation and genetic defects 1164
Ketone bodies: and mitochondrial energy transduction 651
Ketosis: compensating for defects in mitochondrial energy transduction 651
Kidney: possible endocrine link with intestine 643
"Killer genes": activation in programmed cell death 1277
Kinase domains: structure of 576
Kinases: role in pathogenesis of paired helical filament tau 1570
Kinetoplastida: unusual nucleotides in 1040
K-*ras* oncogene: target for antisense oligonucleotides 1291

Lactic acidosis: causes of PDC deficiency in 1164
Laminin: role in the outcome of liver injury 1401
Land snails: magnetic field effects on opioid-induced responses in 807
Large T antigen of SV-40: protein substrate of CK2 313
LDL receptor: role in cholesterol homeostasis 1378
LDL receptor-related protein: a multiligand receptor 890
Lectins: in affinity partitioning 1304
Leishmanias: drug development for diseases caused by 1138
Leukemia: role of chaperones in 371
Leukocytes
attachment and rolling mediated by selectins 866
extravasation controlled by endothelial junctions 910
and oxygen reduction 200
Leukotriene B4: elicited T cell migration through basement membrane 1473
Leukotrienes
role in hypoxia 183
synthetic pathway 1051
Life expectancy
of *C. elegans* extended by mutations in age-1 and daf-2 1355
effect of MOA inhibitors on 609
in the United States 991
Life sciences
basic economic facts about research in 833
how is Europe preparing for in the 21st century? 829 (Editorial)
Life span: genetic determinants of 284
Ligands: recognition by opioid receptors 516
LIM domain: structure of 601

LIM proteins: role in myogenesis 1595
Lipid peroxidation: kainate induced, reduced by melatonin 1205
Lipids: signaling for sustained cellular responses 484
Lipoamide dehydrogenase
pathway of reducing equivalents in catalysis by 1267
target for structure-based drug design 1138
Lipopolysaccharide
induction of vascular adhesion molecule expression 956
tissue factor gene induction by 883
Lipoproteins
Caco-2 cells as model for synthesis and secretion of 626
catabolism mediated by LDL receptor-related protein 890
shared binding sites with plasminogen 939
Liposomes: vascular gene transfer using 843
Liposome vectors: targeting for gene therapy 191
Lipovitellin: α/α coiled fold of 335
5-Lipoxygenase-activating protein: involved in conversion of arachidonic acid 1051
15-Lipoxygenase gene: human, transgenic rabbits with 1623
Liver
extracellular matrix in regeneration of 1401
injury, nutritional impact on outcome of 240
regeneration of 1396
L-NAME: vasoconstrictive response to 379
Lock and key mechanism: in antibody-protein antigen reactions 9
Lolium perenne group I: cytokine production by T cells stimulated with 81
Longevity
genes involved in 284
role of genes that regulate metabolic activity in 1355
Long-term potentiation: arachidonic acid linked to 343
Low-density lipoproteins
mutations in the major apolipoproteins of 768
receptor family 890
L-selectin: structure and function 866
LTA4 hydrolase: involved in conversion of arachidonic acid 1051
LTC4 synthase: involved in conversion of arachidonic acid 1051
Lycopene: reaction with peroxy radicals 1551
Lymphocytes
circulating, melatonin binding by 1331
effects of eicosanoids on 1051
homing directed by L-selectin 866
proliferation induced by unsubstituted and iodinated IL-2 1096
Lysozyme: lack of molecular mimicry at the atomic level 43
Lytic transglycosylase: α/α coiled fold of 335

Macroglycogen: in glycogen biogenesis 1126
Macrophage inflammatory protein-1β: three-dimensional structure 57
Magnetic fields: prediction of parameters that affect nerve cells 547
Major histocompatibility complex
CD4 and CD8 interactions with 21
class I, structural studies of 26
comparison of Hsp70 with 1561
Malate synthase: activity higher in worms mutant for gerontogenes 1355
Malonaldehyde: levels in brain tissue treated with kainate 1205
Manganese: stimulation of the oligopeptide/H^+ symporter 1112
MAPK signaling cascade 726
Maple syrup urine disease: gene defects associated with 1164
Mathematical models: of calcium oscillations and waves 1463
Matrix metalloproteinase
activity detected in vascular tissue 974
in T cell passage through basement membrane 1473
Matrix proteins: role of LDL receptor-related protein in catabolism of 896
Max-Myc: protein substrate of CK2 313
Mechanical loading: induction of NO production by bone cells 1614
Mechanics: of the actin-myosin interaction 636
Medical research: cost savings from 835
Medical sciences: basic economic facts about research in 833
MEK kinase-1: Ras effector in vertebrates 1313
Melatonin
in amelioration of neuroimmunodegeneration 1147
antioxidant action in brain 526
high-affinity binding by circulating T lymphocytes 1331
reduction of kainate-induced lipid peroxidation 1205
Membrane currents: actions of adenosine on 359
Membrane proteins: triple-helix motif in 1537
Membranes
alterations during apoptosis 1284
association of G protein-coupled receptor kinases with 175
carotenoids in 1551
depolarization associated with hypoxia 183
purification by affinity partitioning 1304
Menadione: induction of programmed cell death 1281
Mercuric reductase: comparison with thioredoxin reductase 1267
Mercury
in dental amalgam 1499 (Letter)
exposure from "silver" tooth fillings 504
Metabotropic receptors
G-protein-coupled receptors 745
and transduction 343
Metal-binding sites: design of 94
Metal-containing flavoproteins: structure and mechanism of 473
Metalloantibody: design of 94
Metallo-exopeptidases: manganese-activated proline peptidases 736
Metatopes: characterized for the gp120-M77 complex 127
MHC class II genes: regulatory mechanisms of 1429
Mitochondria
effect of insulin and ketone bodies on energy transduction 651
participation in programmed cell death 1277
role of chaperones in biogenesis and maintenance of 371
Mitochondrial DNA: mutation in diabetes-prone BHE/cdb rats 1638
Mitogens: hepatic growth factors 1396
Mitotic catastrophe: theory of programmed cell death 1277
Modeling: of antibody-protein antigen interactions 13
Molecular conjugate vectors: targeting for gene therapy 191
Molecular dynamics: simulation of antibody-antigen system 14
Molecular mimicry
of anti-idiotypic antibodies 43
of guanylin and intestinal peptides 643
Molecular modeling
of G-protein-coupled receptors 745
of inhibitory region binding to troponin C 762
of opioid receptors 524
MOLT-4 cells: radiation-induced apoptosis inhibited by trolox 1345
Monoamine oxidase inhibitors: a surfeit of 605
Monoamine oxidases: old friends hold many surprises 605
***N*-Monomethyl-L-arginine:** vasoconstrictive response to 379
Monooxygenases: flavoprotein, structure and mechanism of 473
mRNA: measurement of in tumor xenografts 279
Mucins: vascular, selectin ligands 866
Multiple sclerosis
aberrant expression of class II MHC molecules in 1429
cytokine effects in 1577
immune-nervous system interactions in 611
Murine leukemia viruses: retroviral vectors based on 191
Muscarinic acetylcholine receptors: signal transduction through multiple effectors 619
Muscarinic cholinergic receptor: ligand binding inhibited by anti-*T. cruzi* antibody 1482
m_2-Muscarinic receptors: phosphorylation of 175
Muscle contraction: troponin complex and regulation of 755
Muscle LIM protein: role in myogenesis 1595
Muscle regulatory factor: role in myogenesis 1595
Myocardium
anti-*T. cruzi* antibody effect on 1482
preconditioning against arrhythmogenic effects of hypoxia 387
Myocyte enhancer factor 2: role in myogenesis 1595
Myosin: structure of 636
Myositis: histidyl-tRNA synthetase a stimulating antigen in 1226

NADH: reaction with phthalate dioxygenase reductase 1411
NADPH oxidase
activity of old yellow enzyme 1518
as oxygen sensor 187
Na^+/H^+ antiporter: cytokine stimulation of 1577
Naked DNA: vascular gene transfer using 843
Nasopharyngeal carcinoma cells: growth inhibition by bFGF 1211
Necrosis: role of calcium in 219
Neointima formation: plasminogen/plasmin system in 934
Nerve cells: prediction of parameters affecting 547
Nerve growth factor: structure of 50
Nervous system: interactions with immune system 611
Network Entrez molecular information retrieval system 994
Neurodegenerative diseases
apoptosis in 616
role of monoamine oxidases in 605
Neurofibrillary lesions: in Alzheimer's disease 1570
Neuroglian: similarity to tissue factor 852
Neuroimmunodegeneration: pathways for neuron and T cell death 1147
Neurologic disorders: cytokine effects in 1577
Neurons
cell death in neuroimmunodegeneration 1147
tracking in developing brain 324
Neuropeptides: interactions in CNS disease 611
Neurospora crassa: modified DNA bases in 1034
Neurotransmitters: interactions in CNS disease 611
Neurotrophic factor sequence of prosaposin 681
Neutrophils: expression of β1 and α4 integrins 1103
NF-κB

modulation of activity by glutathione and cysteine 246
required for cytokine induction of adhesion molecules 899
role in hepatic regeneration 1527
role in transactivation of the SSRE 880
Nicotinic acid: effects in CHO cells 1643
Nifurtimox: lipoamide dehydrogenase in redox cycling of 1138
NIH awards
indirect costs on 1123 (Editorial)
to individual members of FASEB societies 703
Nitric oxide
activation of transcription of reporter genes 552
in central nervous system disease 611
mechanical strain-induced production by bone cells 1614
and phagocytic cells 200
role in hypoxia 183
and skin microvascular blood flow 411
suppression in rat lung by ethanol 253
therapeutic strategies related to 1319
vasoconstriction triggered by 379
Nitric oxide donors: therapeutic potential of 1321
Nitric oxide synthase
in the L-arginine:NO pathway 1319
inducible, transient expression during brain development 1632
induction and variants during synaptogenesis 799
Nitric oxide synthase inhibitors: therapeutic potential of 1324
Nitroblue tetrazolium: vasoconstrictive response to 379
Nitrofurans: guide structures for design of TR inhibitors 1138
***p*-Nitrophenyl acetate:** concerted reactions of 1585
Nitroprusside: vasoconstrictive response to 379
Nitrovasodilators: in treatment of angina 1321
NMDA
in pancreatic islet cells 686
in regulation of nitric oxide synthase activity 799
NMDA receptors
effects of anesthetics on 1454
and transduction 343
Nonsteroidal anti-inflammatory drugs: cyclooxygenase susceptibility to 1051
Nuclear hormone receptors: zinc finger motifs of 597
Nucleotide excision repair: DNA damage recognition in 1043
Nucleotides: modified 1034

Obesity: determinants of insulin sensitivity in 273
Old yellow enzyme: structure-function relations for 1518
Oligonucleotides: modulation of mammalian gene expression 1288
Oligopeptides: uphill transport stimulated by zinc 1112
Oligosaccharide-protein interactions: in IgG can modulate Fcγ receptor recognition 115
Omega loops: role in protein function and stability 708
Oncogenes: nonnuclear, mechanism of action 726
Oncogenesis: role of MAPK signaling cascade in 726
Opioid receptors
cloned, molecular biology and pharmacology of 516
peptide ligands for 517
Opioids: effects of extremely low frequency magnetic fields on 807
Oral carcinogenesis: suppressed by *doc-1* gene 1362
Organs: cryopreservation of 355
Ornithine decarboxylase: mRNA levels in tumor xenografts 279
Osteoblasts: NO production in response to mechanical strain 1614
Osteocytes
NO production in response to mechanical strain 1614
sensitivity to biomechanical stress 441
Osteogenesis imperfecta: associated with mutations in triple helices 1537
Oxaloacetate: decreased by insulin and ketone bodies 651
Oxazolidinones: monoamine oxidase inhibitors 605
Oxidases
role in plant development 1004
structure and mechanism 473
Oxidation: membrane associated, in radiation-induced apoptosis 1345
Oxidative enzymes: and insulin sensitivity in obesity 273
Oxidative processes: in the aging brain 526
Oxidative stress: cataract induced by 1173

Paired helical filament tau: phosphorylation in Alzheimer's disease 1570
Pancreatic islet cells: ionotropic glutamate receptors in 686
Paper chromatography: advent of 287
Parallel β helix 335
***Paramecium*:** modified DNA bases in 1034
Parathyroid hormone receptors: human and rat 751
Parkinsonism: effect of MOA inhibitors in 609
Paroxysmal nocturnal hemoglobinuria: glycosyltransferase deficiency in 1436
Patterning: *see* Developmental patterning
Pax-3 transcription factor: role in myogenesis 1595
PC-12 cells: prediction of magnetic field parameters affecting 547
PDGF-B gene: positive shear stress response element in 874
Pectate lyases: parallel β helix of 335
Peer review
anonymity in 571 (Editorial)
anonymity in 1381 (Letter)
should be fair 1500 (Letter)
PEPT 2: selective expression in SKPT-0193 cekks 1489
Peptide ligands: binding to G-protein-coupled receptors 745
Peptides
binding by MHC class I molecules 26
bound to MHC molecules 40
proline motifs in 736
T cell activating in solution 40
Peptidoglycan: prevention of arthritis induced by 446
Peptidyl-prolyl *cis-trans* isomerases: immunophilins as 63
Perlecan: in the liver 1401
Permeability
biological modulators of 913
endothelial, intercellular junctions and 910
Peroxidases: produced by phagocytic cells 200
Peroxynitrite: in nitric oxide-related vasoconstriction 379
Peroxy radicals: carotenoid reactions with 1551
Phagocytic cells: free radicals and 200
Phenothiazines: guide structures for design of TR inhibitors 1138
Phorbol esters
signaling pathways initiated by 726
stimulation of class II expression 1429
tissue factor gene induction by 883
Phosphatases: role in pathogenesis of paired helical filament tau 1570
Phosphate diesters: reactions of 1585
Phosphate monoesters: reactions of 1585
Phosphate triesters: hydrolysis of 1585
Phosphodiesterase: Gα interaction with 1059
Phospholipase A_2
activation by glutamate-mediated increases in calcium 343
effector in muscarinic receptor signaling 619
mechanism of activation 484
Phospholipase C
activation on binding of ET-1 to ET$_A$ 1196
effector in muscarinic receptor signaling 619
Gα interaction with 1059
isoforms for generation of diacylglycerol 484
Phospholipase D
effector in muscarinic receptor signaling 619
and sustained cellular responses 484
Phospholipid kinase: required for clathrin-coated vesicle sorting 1445
Phosphorane: conditions of formation 1585
Phosphorylase: phosphorylation/dephosphorylation regulation of 1126
Phosphorylation: by G protein-coupled receptor kinases 175
Phosphoryl groups: mechanisms of transfer 1585
Phosphotriesterase: structure of 497
Photosensitivity diseases: carotenoids in treatment of 1547
Phthalate dioxygenase reductase: structure and mechanism of 1411
Phytohemagglutinin: response of silicone implant patients to 424
Picolinic acid: toxic effects of 1643
Picornaviruses: surface amino acids of 87
Pigmy goat: database created from MRI images of 434
Pituitary adenylate cyclase-activating polypeptide: pathways stimulated by 1299
Pituitary hormones: glutamate in modulation of 815
Plant development: proteoglycans and glycoproteins in 1004
Plant viruses: surface amino acids of 87
Plasma membrane calcium pumps: chimeras of 670
Plasmin
expression regulated by LDL receptor-related protein 890
plasminogen receptor occupancy and 941
Plasminogen activators: catabolism mediated by LDL receptor-related protein 890
Plasminogen/plasmin system: gene targeting and gene transfer studies 934
Plasminogen receptors: cellular distribution of 941
Plasminogen system: cell biology of 939
Platelet-activating factor: neutrophil adhesion induced by 1103
Platelet-derived growth factor: structure of 50
Platelet-derived growth factor B: elevation after carotid denudation 1336
Platelet-derived growth factor receptor: binding determinants and antagonists 140
Platelet-endothelial cell adhesion molecule
localization at interendothelial contacts 912
marker for endothelial cells 928
Platelet factor 4: three-dimensional structure 57
Pokeweed mitogen: response of silicone implant patients to 424
Polyamines: in regulation of CK2 313

Polyene chain: of carotenoids 1551
Polyethylene glycol: in affinity partitioning 1304
Polylysine: in regulation of CK2 313
Polypeptides: chaperone interactions with 1559
Posttranscriptional regulation: in regenerating liver 1396
Potassium channels: in hypoxic pulmonary vasoconstriction 183
Potassium chloride: hemolysate effect on vasoconstrictor response to 379
Potassium currents: actions of adenosine on 359
Preconditioning: of myocardium by reoxygenation 387
Proglycogen: influence on total glycogen stores 1126
Programmed cell death
biochemistry of 1277
cytoplasmic control of 1281
in neurodegenerative disorders 616
role of calcium in 219
Prolactin: release by tumor cells treated with estrogen 404
Prolactin receptor: similarity to tissue factor 852
Proliferation: role of MAPK signaling cascade in 726
Proline motifs: in peptides 736
Propranolol: effect on arrhythmias caused by hypoxia 387
Prosaposin: identification of neurotrophic factor sequence of 681
Prostaglandin E_2
elicited T cell migration through basement membrane 1473
release by osteocytes subjected to stress 441
Prostaglandins
mechanical strain-induced production by bone cells 1614
role in hypoxia 183
and skin microvascular blood flow 411
Proteases
activation of nuclear destruction by 1277
microscopic localization of 974
modulation of plasminogen receptors 939
Proteinases: catabolism mediated by LDL receptor-related protein 890
Protein C: thrombomodulin and activation of 946
Protein engineering
alpha/beta barrel proteins as targets for 497
mobility in designed proteins 1013
Protein fold: zinc finger as 597
Protein folding
chaperones in 371
forces governing 1013
hydrophobic effect in 535
role of molecular chaperones in 1559
role of omega loops in 708
Protein G: antibody binding by 13
Protein kinase, AMP activated: inhibition of fatty acid and cholesterol synthesis 541
Protein kinase C: and lipid signaling for sustained cellular responses 484
Protein kinase CK2: multiple substrates and puzzling regulation 313
Protein kinases
discrimination between serine/threonine and tyrosine 1255
eukaryotic superfamily of 576
inhibition of muscle regulatory factors 1595
in the MAPK signaling cascade 726
phosphorylation of G protein-coupled receptors 175
required for clathrin-coated vesicle sorting 1445
Proteins
omega loops, a nonregular secondary structure, in 708
triple-helix motif in 1537
Protein-serine/threonine kinases: classification of 576
Protein-tyrosine kinases: classification of 576
Proteoglycans
in hepatic regeneration 1401
in plant development 1004
role in ligand presentation 893
Proteolytic enzymes: proline in resistance to 736
Protons: allosteric effects of 216
P-selectin
marker for endothelial cells 928
structure and function 866
Pseudotyping: approaches to targeted vectors 191
Psoralen antisense oligonucleotides: inhibition of collagenase I expression in fibroblasts 1371
Psoriasis: therapeutic use of glycosyltransferase mutants for 1436
Pulmonary vascular smooth muscle cells: hypoxic contraction in 183
Purified protein derivative: cytokine production by T cells stimulated with 81
Pyridine nucleotides: model for electron transfer between 1411
Pyruvate dehydrogenase complex: gene regulation and genetic defects in 1164

Quaternary molecular switching 210
Quinones: guide structures for design of TR inhibitors 1138

Radiation: mechanism of apoptosis induced by 1345
Raf kinase: Ras effector in vertebrates 1313
Rapamycin: binding, FK506 and 68
Ras: target proteins in eukaryotic cells 1311
Reactive nitrogen intermediates: down-regulation by ethanol 253
Reactive oxygen species: in programmed cell death 1281
Receptor-associated protein (RAP): antagonist of the LDL receptor family 892
Receptors: in regulation of calcium through signaling cross-talk 1297
Recombinant DNA: Asilomar conference on 295
Rectal mucosa: circannual rhythm in DNA synthesis in 397
Regeneration
hepatic, extracellular matrix in 1401
of liver 1396
REKS: Ras effector in vertebrates 1313
Renal microvascular development: stimulation under organotypic culture conditions 963
Renal system: effects of amalgam mercury on 504
Renal transport: stimulation by zinc 1112
Reoxygenation: effect on arrhythmias caused by hypoxia 387
Reperfusion injury: therapeutic use of glycosyltransferase mutants for 1436
Reproductive system: effects of amalgam mercury on 504
Reptiles: freeze avoidance in 351
Research funding: federal appropriations for 833
Restenosis
gene therapy for 845
treatment by blocking smooth muscle cell replication 1336
Retinoid-binding proteins: structural determinants important for function 229
Retinol-binding protein: structural determinants important for function 229
Retroviral vectors: targeting for gene therapy 191
Retroviruses: vascular gene transfer using 843
Retrovirus infection: in mice, animal model for neuroimmunodegeneration 1147
Reverse transcriptase: discovery of 1658
Rhesus monkey: database created from MRI images of 434
Rheumatoid arthritis
aberrant expression of class II MHC molecules in 1429
therapeutic use of glycosyltransferase mutants for 1436
Rhodopsin/β-adrenergic receptors: G-protein-coupled receptors 745
Rhodopsin kinase: properties of 175
Rhodopsin receptors: phosphorylation of 175
Ribonuclease inhibitor: α/β coiled fold of 335
Ribozymes
modulation of mammalian gene expression 1288
natural, artificial evolution of 1183
Ricin: compared to saporin-transferrin complex 1220
RING finger: structure of 603
RNA
biochemistry centered on 1183
structure at high resolution 1023
RNA polymerase II: elongation complex 1419

***Saccharomyces carlsbergensis*:** old yellow enzyme from 1518
Saccharomyces cerevisiae
modified DNA bases in 1034
old yellow enzyme from 1518
Ras effectors in 1312
regulation of *GAL* genes in 777
Saporin-transferrin conjugate: compared to ricin toxin 1220
Saposins: and neurotrophic activity of prosaposin 681
***Schizosaccharomyces pombe*:** Ras effectors in 1312
Secondary structure: omega loops in 708
Second messengers
and the calcium response to endothelin 1196
in regulation of calcium through signaling cross-talk 1297
α-Secretase: cleavage of amyloid precursor protein 366
Secretin/vasointestinal peptide receptors: G-protein-coupled receptors 745
Selectins
mice deficient in 869
therapies directed at 871
vascular adhesion molecules 866
Selegeline: monoamine oxidase inhibitor 605
Selenium: influence on levels of selenoprotein W 392
Selenoprotein W: tissue distribution and influence of selenium on 392
Self-association: of interleukin-2 bound to its receptor 1096
Self-splicing introns: artificial evolution of 1183
Senescence
of cells increased by HSP27 1079
role of genes that regulate metabolic activity in 1355
Serine protease FVIIA: ligand for tissue factor 852
Serine proteases

convergent evolution in 501
new family of 740
Serine/threonine: discrimination from tyrosine by protein kinases 1255
Serotonin: role in hypoxia 183
Serum: tissue factor gene induction by 883
Serum response factor: protein substrate of CK2 313
Severe combined immunodeficiency disorder: lack of class II gene expression in 1429
Shear: effects on endothelial cell calcium 968
Shear stress response element: transcription up-regulation by 874
Signaling
CD4 and CD8 involvement in 23
intramolecular, complexation and 101
by the MAPK cascade 726
network involving protein kinase C 484
Signal transduction
adhesion molecules in 613
binding of factor Xa and 860
blocked by inhibition of calcineurin 63
in cell responsiveness to PDGF 140
cytokine-receptor complexes and 50
endothelial cell, early ontogeny of 956
endothelin receptors and 1196
extreme heterogeneity in programmed cell death 1277
fibroblast growth factor 919
glutamate receptors and 343
G-protein-coupled receptors in 745
heterotrimeric G-proteins in 1059
imbalanced in neuroimmunodegeneration 1147
initiated by Ras 1311
by muscarinic receptors 619
and muscle regulatory factor activity 1595
in neuronal differentiation 681
pathways, effect on glial cells 1577
in regulation of cellular calcium fluxes 1297
role of calcium in 219
through endothelial cell-to-cell junctions 912
Signal transduction proteins: protein substrate of CK2 313
SII: role in cleavage 1420
Silica: immunologic stimulation by after use of mammary implants 424
Silicone mammary implants: immunologic stimulation by silica after use of 424
Sinoatrial node: response to adenosine 359
Skeletal muscle
genetic determinism of fiber type proportion in 1091
and insulin sensitivity in obese women 273
transcription factors in development of 1595
Skin microvascular blood flow: increased by captopril 411
SKPT-0193 kidney cells: constitutive expression of H^+/peptide cotransporter 1489
Smooth muscle cells: proliferation inhibited by D-peptide analog of IGF-1 1336
Solvent entropy: in antibody-protein antigen reactions 9
Specificity-determining residues: identification in antibodies 133
Spermine: in regulation of CK2 313
Sphingomyelin: in apolipoprotein B synthesis and secretion 626
Spin traps: fluorophore containing, free radical localization with 1085
Sprague-Dawley rat: database created from MRI images of 434
Stability: protein, role of omega loops in 708
Starch: raw, digestion of 118
Staurosporine: DNase activity in cells treated with 665
Stem cell factor: in the nervous system 613
Steroid hormones: modulation of plasminogen receptors 939
Stress: induction of chaperones by 371
Stromelysin: detection of 974
Structural biology: elements of successful program in 1 (Editorial)
Structural immunology
milestones in 146
problems in molecular recognition 7
Substance P receptors: phosphorylation of 175
Succinate: decreased by insulin and ketone bodies 651
Sudden infant death: acyl-CoA dehydrogenase deficiencies in 718
Sulfhydryl compounds: in mercury exposure from dental amalgam 504
Superoxide
cataract formation in organ culture caused by 1173
formation by cellular systems 200
Superoxide dismutase
activity higher in worms mutant for gerontogenes 1355
effect on nitric oxide-related vasoconstriction 379
inhibiton and apoptosis 1281
Suramin: platelet-derived growth factor receptor antagonist 140
Swainsonine: trial use as treatment in breast cancer 1436
***Sycon* monaxons:** textural characteristics 262
Synaptogenesis: induction and variants of NO synthase during 799
Syndesmos: endothelial 910
Tachyarrhythmias: therapeutic efficacy of adenosine for 359
Tailspike protein from P22 phage: parallel β helix of 335
Talmage, David: role in clonal selection theory 164
Tamoxifen: effect on mRNA levels in tumor xenografts 279
Tau proteins: in Alzheimer's disease 1570
T cell receptor: antigenic epitope recognized by 26
T cells
CD4 and CD8 in adhesion and stimulation of 17
$CD4^+$, preferential expression of CD30 by 81
cell death in neuroimmunodegeneration 1147
circulating, melatonin binding by 1331
migration stimulated by eicosanoids 1473
Tenascin: in hepatic regeneration 1401
Tertiary molecular switching 210
***Tetrahymena*:** modified DNA bases in 1034
Tetrodotoxin: effect on glutamate-associated calcium increase 815
TFIIF: roles in transcription and elongation 1423
Th1, Th2, and Th0 clones: expression of CD30 81
Thapsigargin: calcium release by 788
Theophylline: use to reverse bradyarrhythmias 364
Thioacetamide: effect of glucose on liver injury by 240
Thiol-disulfide interchange: in thioredoxin reductase 1267
Thiols: distinct functions of nascent 1267
Thioredoxin reductase: from *E. coli*, mechanism and structure of 1267
Thrombin: complex with thrombomodulin 949
Thrombomodulin: as model of mechanisms of protease specificity 946
Thrombosis: plasminogen/plasmin system in 934
Thrombospondin: catabolism mediated by LDL receptor-related protein 890
Thymidine: incorporation blocked by IGF-1 analog 1336
Thyrotropin receptor: in calcium mobilization 1297
Tight junctions: endothelial 910
Time structure: human, preservation of functional advantage of 269
Tissue factor: molecular recognition and cofactor function 852
Tissue factor gene: regulation of 883
T-kininogen: levels in peptidoglycan-induced arthritis 446
Tooth fillings: "silver," mercury exposure from 504
***Toxocara canis* excretory/secretory antigen:** cytokine production by T cells stimulated with 81
Transcriptional regulation
of endothelial cell adhesion molecules 899
in regenerating liver 1396
by shear stress 874
Transcriptional targeting: for gene therapy 191
Transcription factors
c-Myc acting as 1067
IIS, zinc-binding motif of 603
involved in MHC class II gene regulation 1429
modulation of activity by glutathione and cysteine 246
in the myogenic program 1595
protein substrate of CK2 313
regulating tissue factor gene expression 883
in regulation of RNA polymerase II 1419
role in hepatic regeneration 1527
and shear stress 874
Transferrin: cytotoxic conjugate with saporin 1220
Transforming growth factor α
mRNA levels in tumor xenografts 279
role in hepatic regeneration 1527
Transforming growth factor β1
elevation after carotid denudation 1336
in regulation of muscle regulatory factors 1595
role in hepatic regeneration 1527
Transforming growth factor-β2: structure of 50
Transgenic mice: overexpressing *c-myc* 1067
Transgenic rabbits: with integrated human 15-lipoxygenase gene 1623
Trans-Golgi network: clathrin-coated vesicle budding from 1445
Translocation: function of Hsp70 in 1559
Transmigration: induction of neutrophil integrin expression 1103
Tricarboxylic acid cycle: metabolites increased by insulin and ketone bodies 651
Triose phosphate isomerase: α/β barrel domain of 497
Triple-helix motif: in proteins 1537
Triplex DNA: modulation of mammalian gene expression 1288
Triplex-forming oligonucleotide: effect on RNA transcription 1288
Trolox: inhibition of apoptosis in irradiated lymphocytes 1345
Tropomyosin: in regulation of muscle contraction 755
Troponin complex: and regulation of muscle contraction 755
***Trypanosoma brucei*:** hypermodified DNA base in 1034
Trypanosoma cruzi
antibody, effect on myocardium 1482
lipoamide dehydrogenase in 1138
Trypanosomes: drug development for diseases caused by 1138

Trypanothione reductase: target for structure-based drug design 1138
Tsup-1 cells: migration stimulated by eicosanoids 1473
Tumor necrosis factor
Fvs in delivery of 74
and receptors 51
Tumor necrosis factor α
blockage of astrocyte migration 1605
doc-1 cDNA homologous with gene induced by 1362
induction of adhesion molecule transcription 899
induction of vascular adhesion molecule expression 956
in the nervous system 613
signaling pathways, effects on glial cells 1577
suppression in rat lung by ethanol 253
Tumor necrosis factor β: in the brain 613
Tumor xenografts: measurement of mRNA levels in 279
Turncoat inhibitors 1138
Tyrosine: discrimination from serine/threonine by protein kinases 1255
Tyrosine kinase: effector in muscarinic receptor signaling 619

UDPglucose: hydrolysis by glycogenin 1126
Ultraviolet light: in design of antisense oligonucleotides 1371
Unfoldases: chaperones as 371
Uroguanylin: distribution and activity 643

Vascular biology: integrative molecular cell biology 841
Vascular cell adhesion molecule-1
expression and inducibility 956
transcriptional regulation of 899
Vascular disease: gene therapy for 843
Vascular endothelial cadherin: marker for endothelial cells 928
Vascular endothelial growth factor
effect as a permeability factor 913
effect on renal microvascular development 963
vascular gene transfer using 843
Vascular grafts: modification by gene therapy 848
Vascularization: in hepatic regeneration and cirrhosis 1401
Vascular smooth muscle
endothelin receptors and calcium signaling in 1196
gene therapy to inhibit proliferation of 843
Vasoconstriction: nitric oxide related in perfused lungs 379
Vasodilators: nitric oxide donors as 1321
Vastus lateralis muscle: proportion of type I fibers in 1091
Vectors
local delivery to therapeutic target 848
targeted, for gene therapy 191
Ventricle: actions of adenosine in 359
Ventricular arrhythmias: caused by repeat exposure to hypoxia 387
Venules: high endothelial 931
Vertebrate ectotherms: survival mechanisms of 351
Very low density lipoprotein
mutations in the major apolipoproteins of 768
receptor 890
Violaxanthin: in the xanthophyll cycle 1547
Viral epitopes: properties of surfaces of 87
Viroid hammerheads: artificial evolution of 1183
Virtual genes: gerontogenes as 284
Viruses: proline motifs as targets for 736
Visual system: axonal navigation in 329
Vitamin A: proteins mediating transport and functions of 229
Vitamin C: protection of brain from oxidative stress 526
Vitamin D_3: effect on renal microvascular development 963
Vitamin E: protection of brain from oxidative stress 526
Vitronectin: overrides TNF-α effect on astrocyte migration 1605
Voltage-dependent anion channel 511
von Willebrand factor: marker for endothelial cells 928

Wheat germ agglutinin: in affinity partitioning 1304
World Wide Web 472
FASEB information resources on 707
NIH topics on 707

Xanthine dehydrogenase: structure-function relationships of 995
Xanthine oxidase: structure-function relationships of 995
Xanthine oxidizing enzymes: overall morphology of 995
Xanthophyll cycle: in higher plants 1547
***Xenopus*:** model for calcium waves in 1469
Xeroderma pigmentosum: nucleotide excision repair and 1043

Zeaxanthin: in the xanthophyll cycle 1547
Zinc
inhibition of DNases 665
stimulation of uphill transport of oligopeptides 1112
Zinc-binding sites: design of 94
Zinc fingers 597
Zinc ligands: interleaved 603
Zymography: microscopic localization of proteases by 974

Author Index to Volume 9

Aavik, E., 1336
Abdulkadir, S. A., 1429
Abergel, C., 133
Ackers, G. K., 210
Adam, A., 446
Addadi, L., 262
Adibi, S. A., 1112
Aho, P., 1336
Aizenberg, J., 262
Ajubi, N. E., 441
Alatalo, S., 1336
Allende, C. C., 313
Allende, J. E., 313
Almeida, O. F. X., 419
Almerigogna, F., 81
Alonso, M. D., 1126
Altieri, D. C., 860
Amenta, P. S., 1401
Amzel, L. M., 7, 43
An, S., 1051, 1473
Andersen, K. N., 101
Andrews, J. S., 392
Anglister, J., 120
Archer, S. L., 183
Argraves, W. S., 890
Ashkenazi, I. E., 269
Aso, T., 1419
Azuma, N., 681

Bagby, G., 253
Ballou, D. P., 1411
Baltimore, D., 1658
Ban, N., 107
Banaszak, L. J., 567
Barranger, J. A., 681
Baserga, R., 1336
Bauer, E. A., 1371
Bautch, V. L., 956
Beilstein, A., 392
Belardinelli, L., 359
Belbruno, J. J., 1649
Benane, S. G., 547
Benos, D. J., 1577
Benveniste, E. N., 1577
Berdanier, C. D., 1638
Berezesky, I. K., 219
Bhadti, V. S., 1085
Bhan, A., 1085
Billingsley, M. L., 799
Bitonti, A J., 279
Blackman, C. F., 547
Blanchard, J. P., 547
Blazeski, R., 324
Blystone, R. V., 434
Borst, P., 1034
Bosch, F., 1067
Boss, G. R., 552
Bouchard, C., 1091
Bourrin, S., 1614
Boyer, P. D., 559
Boys, C. W. G., 852
Braden, B. C., 9
Brandsch, C., 1489
Brandsch, M., 1489
Brasseur, R., 535
Braun, W., 63
Brittigan, B. E, 200
Britton, G., 1551
Brodsky, B., 1537
Brunori, M., 1220
Bunn, H. F., 1392
Burger, E. H., 441
Burke, T. J., 379
Bush, T. L., 279
Bygrave, F. L., 1297

Cai, Z., 1023
Calvo, J. R., 1331
Carafoli, E., 670
Carmeliet, P., 934
Carson, G. S., 681
Carson, J. J. L., 807
Casey, C. G., 1392
Chan, L., 1623
Chance, B., 651, 692
Chanda, S., 240
Chao, H-H., 1211
Chen, A., 866
Chen, J-K., 1211
Chen, L. D., 1205
Chiang, T., 1362
Chiaramonte, M. G., 1482
Chmielewski, P. A., 279
Chou, M. Y., 1362
Clarke, K., 651
Cleland, W. W., 1585
Clore, G. M., 57
Cohen, G. N., 981
Cohen, M. S., 200
Colberg, S. R., 273
Collen, D., 934
Collins, N., 516
Collins, T., 899
Colman, R. W., 446
Conaway, J. W., 1419
Conaway, R. C., 1419
Cooke, R., 636
Corada, M., 910
Correll, C. C., 1411
Costanzo, J. P., 351
Cozzone, G., 1336
Cremaschi, G., 1482
Cross-Doersen, D. E., 279
Curci, S., 788
Curri, M. G., 643

D'Agostino, I., 1220
D'Elios, M. M., 81
Damke, H., 1445
Daniel, C. K., 81
Daniel, H., 1112
Davies, D. R., 50
Day, J., 107
De Carli, M., 81
De Meester, I., 736
De Vreese, A., 1355
Dejana, E., 910
Del Prete, G., 81
DeLa Cadena, R. A., 446
Deng, G., 665
Denisova, G., 127
DeVries, A. L., 351
Dildy-Mayfield, J. E., 1454
Dodes, J. E., 1499
Donoff, R. B., 1362
Dröge, W., 246
Dubois-Stringfellow, N., 956
Dunder, U., 428
Dwek, R. A., 453
Dyson, H. J., 37

Ebenbeck, C., 963
Edgington, T. S., 467, 841
Edmundson, A. B., 101
Ellington, A. D., 1183
Engel, P., 866
Entsch, B., 476
Epstein, S. E., 843
Erwin, D. N., 434
Escobar, C., 107
Esmon, C. T., 946
Faber-Elman, A., 1605
Fan, Z-C., 101
Fang, L., 516
Fanton, J. W., 434
Farah, C. S., 755
Farber, G. K., 497
Fausto, N., 1527
Feigl, E., 1123
Feinstein, D. L., 1632
Felder, C. C., 619
Fetrow, J. S., 708
Fiani, M. L., 1220
Finkel, T., 843
Fishell, G., 324
Fitch, F. W., 1243
Flower, D. R., 566
Foletti, D., 670
Fong, T. M., 745
Forsdyke, D. R., 164
Forte, L. R., 643
Fossati, C. A., 1482
Fox, K. M., 1518
Frangos, J. A., 441
Frey, A. H., 5, 472, 571, 707, 994, 1245, 1517
Friesel, R. E., 919

Gaffney, B. J., 7
Galea, E., 1632
Galis, Z. S., 974
Galter, D., 246
Gametchu, B., 404
Ganapathy, V., 1489
Gao, J. H., 434
Garcia-Mauriño, S., 1331
García-Sancho, J., 815
Garrison, H. H., 703, 833
Gassner, G. T., 1411
Gatti, D. L., 1411
Gershoni, J. M., 127
Getzoff, E. D., 94
Gimbrone, M. A., Jr., 874
Goberna, R., 1331
Godement, P., 324
Goetzl, E. J., 1051, 1473
Gommers-Ampt, J. H., 1034
Gonoi, T., 686
Gonzalez-Haba, M. G., 1331
Goodall, M., 115
Goossens, F., 736
Gorelik, G., 1482
Graziano, M. P., 745
Greenberg, S. S., 253
Greenwood, A., 107
Gregori, X., 1067
Groffen, J., 428
Gronenborn, A. M., 57
Gruber, H. E., 541
Guddat, L. W., 101
Guerini, D., 670
Guerrero, J. M., 1331
Guidarini, D., 1220

Hall, M. F., 424
Hamm, H. E., 1059
Hanissian, A., 424
Hanks, S. K., 576
Hanson, J., 262
Hansson, E., 343
Hardy, S. P., 509
Harris, R. A., 1164, 1454
Harrison, D. G., 968
Hartl, F-U., 1559
Hasel, K. W., 107
Hauser, S. L., 1473
Hayashi, S., 419
Häyry, P., 1336
Hecht, M. H., 1013
Heidaran, M. A., 140
Heinig, S., 703, 833
Heinrich, P. C., 659
Heisterkamp, N., 428
Hemmann, U., 659
Hendrick, J. P., 1559
Hendriks, D., 736
Hengge, A. C., 1585
Henin, N., 541
Herd, S. M., 371
Herren, T., 939
Heyward, S. A., 956
Hickey, E., 1079
Higgs, E. A., 1319
Highsmith, R. F., 1196
Hille, R., 995
Hiller, R., 120
Hiraiwa, M., 681
Hoeffler, W. K., 1371
Hofer, A. M., 788
Hoj, P. B., 371
Holmes, K. C., 167
Holsboer, F., 659
Holt, J. M., 210
Hoogenraad, N. J., 371
Hoover-Plow, J. L., 939
Hopfer, U., 1489
Horng, G., 1288
Hosmane, R. S., 1085
House, D. E., 547
Hruby, V. J., 516
Huang, R., 1096
Hultquist, K., 1371
Hunter, T., 576, 1255

Idriss, S., 552
Inagaki, N., 686
Inglese, J., 175
Ioffe, E., 1436
Ippoliti, R., 1220
Ishida, H., 686, 1288
Iwanaga, T., 686

James, N. L., 968
Jameson, B. A., 1336
Javitt, N. B., 1378
Jefferis, R., 115
Jergil, B., 1304
Jonakait, G. M., 611
Jukes, T. H., 991, 1381, 1501
Jurnak, F., 335

Kabsch, W., 167
Kahn, M., 681
Kalinich, J. F., 1345
Kallen, J., 63
Kaminski, A., 1288
Kamtekar, S., 1013
Kane, J. L., 434
Kaneko, T., 686
Kaplan, D., 1096
Karplus, P. A., 1518
Kashani-Sabet, M., 1288
Kashiwaya, Y., 651
Kaslow, H. R., 291
Kavaliers, M., 807
Kaye, K. J., 1501
Kehrli, M. E., Jr., 1103
Keith, T. L., 1196
Keizer, J., 1463
Kelley, D. E., 273
Keon, C. A., 651
Kettner, C. A., 446
Kijima, H., 1288
Kim, J-J. P., 718
King, M. T., 651
Kishimoto, Y., 681
Kishiyama, J. L., 1473
Klein-Nulend, J., 441
Kloth, S., 963
Klotz, K-N., 567
Klug, A., 597
Knapp, R. J., 516
Knox, J. P., 1004
Koetzle, T. F., 262
Kolls, J., 253
Konieczny, S. F., 1595
Kornberg, A., 1497
Kounnas, M. Z., 890
Krauth-Siegel, R. L., 1138
Krebs, E. G., 726
Krinsky, N. I., 1547
Kroemer, G., 1277
Kubes, P., 1103
Kubitza, M., 963

Kühn, H., 1623
Kumar, P. K. R., 1183
Kuromi, H., 686
Kuronen, I., 428

Labeur, C., 768
Laird, A. D., 1527
Lampugnani, M. G., 910
Lanyon, L. E., 1614
Larochelle W. J., 140
Lavie, V., 1605
Layne, J. R., Jr., 351
Lea, S., 88
Leahy, D. J., 17
Leblond, C. P., 1234
Lee, R. E., Jr., 351
Lee, V. M.-Y., 1570
Lefkowitz, R. J., 175
Leibach, F. H., 1489
Leiserowitz, L., 262
Lendaro, E., 1220
Leppert, D., 1473
Lerner, R. A., 1
Levin, E. G., 1079
Levy, E., 626
Libby, P., 974
Lin, M., 1371
Lins, L., 535
Linthicum, D. S., 101
Lobel, K., 379
Lohr, D., 777
Loi, R. K., 411
Lomako, J., 1126
Lomako, W. M., 1126
Lorscheider, F. L., 504, 1500
Lott, K. A., 434
Lott, L. E., 434
Ludolph, D. C., 1595
Ludwig, M. L., 1411
Lund, J., 115
Lynn, W. S., 1147

Machen T. E., 788
Machu, T. K., 1454
Maciag, T., 919
Mackman, N., 883
Mahadevan, D., 140
Malatynska, E., 516
Malchiodi, E. L., 1482
Maniatis, T., 899
Marguerie, G., 829
Marshall, M. S., 1311
Martin, A., 1226
Martin, D. M. A., 852
Martinez-Hernandez, A., 1401
Martinus, R. D., 371
Mason, C. A., 324
Mason, P. A., 434
Massey, V., 473, 1518
Mathews, C. E., 1638
McBride, J., 1362
McClain, D. E., 1345
McGraw, R. A., 1638
McPherson, A., 107
Mehendale, H. M., 240
Mehran, M., 626
Meinkoth, J. L., 552
Melchiorri, D., 1205
Merrill, G. F., 387
Merrill, J. E., 611
Mignotte, B., 1277
Mihic, S. J., 1454
Mihm, S., 246
Mikol, V., 63
Miles, L. A., 939
Miller, H. I., 1511
Miller, J. A., 279
Miller, N., 190
Minuth, W. W., 963
Moncada, S., 1319
Mononen, I., 428
Moore, J. G., 397
Myllärniemi, M., 1336

Naegeli, H., 1043
Nagai, M., 1362
Nakagawa, H., 115
Nathenson, S. G., 26
Naylor, D. J., 371
Neish, A. S., 899
Nerem, R. M., 968
Newcomer, M. E., 229
Nijweide, P. J., 441
Nishino, T., 995
Nishizuka, Y., 484
Nisticó, G., 1205
Niu, X-F, 1103
Noronkoski, T., 428

O'Brien, J. S., 681
O'Connor, P. J., 387
Ogilvie, P., 799
Oh, D., 1371
Ohkawa, T., 1288
Ohta, Y., 1288
Okamoto, Y., 686
Olson, J. A., 1547
Ono, S. J., 1429
Opdenakker, G., 453
Orikasa, C., 419
Ossenkopp, K-P., 807

Padlan, E. A., 133
Pan, Y., 43
Pappas, T. C., 404
Patchev, V. K., 419
Patel, M. S., 1164
Patierno, S. R., 1643
Persson, A., 1304
Petho-Schramm, A., 1623
Petit, P., 1277
Pezeshki, G., 659
Pilz, R. B., 552
Piotrowicz, R. S., 1079
Pitsillides, A. A., 1614
Pizzolo, G., 81
Plow, E. F., 939
Podack, E. R., 665
Pohl, T., 659
Poljak, R. J., 9
Pollock, D. M., 1196
Postgate, J., 1507
Pou, S., 200, 1085
Pound, J. D., 115
Prasad, P. D., 1489
Prato, F. S., 807
Premont, R. T., 175
Price, D. L., 366
Pujol, A., 1067
Putnam, F. W., 146

Raag, R., 73
Radda, G. K., 651
Radzio-Andzelm, E., 1255
Räisänen-Sokolowski, A., 1336
Ramakrishnan, N., 1345
Ramasarma, T., 1500
Ramos, C. L., 200
Ramsay, R. R., 605
Rapoport, R., 956
Rattan, S. I. S., 284
Rawlinson, S. C. F., 1614
Read, M. A., 899
Reardon, D., 497
Redlitz, A., 939
Reinach, F. C., 755
Reinberg, A. E., 269
Reinhardt, P. H., 1103
Reis, D. J., 1632
Reiter, R. J., 526, 1205
Rens-Domiano, S., 1059
Resnick, N., 874
Reul, J. M. H. M., 659
Risau, W., 926
Riu, E., 1067
Rivas, R., 324
Roberts, H. R., 1297
Roberts, V. A., 94
Roby, J. W., 434
Röckl, W., 963
Roeske, W. R., 516
Romangnani, S., 81
Romppanen, E-L., 428
Ronnbäck, L., 343
Rosauer, R., 101
Rosen, G. M., 200, 1085
Rosseneu, M., 768
Rudd, P. M., 453
Ruf, W., 852
Ryan, M. T., 371

Sacchettini, J. C., 26
Sandberg, J. A., 1157
Sanderson, M. J., 1463
Sartor, R. B., 446
Sato, K., 651
Scanlon, K. J., 1288
Scharp, , S., 736
Scherf, T., 120
Schilling, K., 799
Schlue, W-R., 788
Schmid, S. L., 1445
Schmidbauer, A., 963
Schmidt, H. H. H. W., 799
Schöbitz, B., 659
Schöneck, R., 1138
Schvartz, I., 1605
Schwabe, J. W. R., 597
Schwartz, M., 1605
Schwimmer, S., 1118
Seger, R., 726
Seidman, E., 626
Seino, S., 686
Seino, Y., 686
Semeins, C. M., 441
Seo, H-C., 681
Sepúlveda, F. V., 509
Sewerynek, E., 1205
Shah, N. K., 1537
Shaltiel, S., 1605
Shan, L., 101
Shanklin D. R., 424
Shen, J., 1623
Shen, L. X., 1023
Shryock, J. C., 359
Shulman, M. J., 1226
Silverstein, S. C., 160, 833
Simoneau, J.-A., 273, 1091
Singer, T. P., 605
Sisodiap, S. S., 366
Slikker, W., Jr., 1157
Smaaland, R., 397
Smalley, D. L., 424
Smith, C. W., 1103
Smith, D., 1096
Smith, W. L., 1051
Snedy, J., 1463
Song, Y., 359
Sothern R. B., 397
Spector, A., 1173
Srinivas, M., 359
Stadnicki, A., 446
Stanley, P., 1436
Stearns, D. M., 1643, 1649
Steeber, D. A., 866
Steer, C. J., 1396
Sterin-Borda, L., 1482
Stevens, M. V., 424
Strader, C. D., 745
Strickland, D. K., 890
Stuart, D., 88
Stumpf, P. K., 458
Suhasini, M., 552
Sukhova, G. K., 974
Summers, A. O., 504, 1500
Suswillo, R. F. L., 1614

Takahashi, N., 115
Taylor, S. S., 1255
Tedder, T. F., 866
Thaete, F. L., 273
Thanos, D., 899
Thorpe, C., 718
Ticher, A., 269
Tinoco, I., Jr., 1023
Tipper, J. P., 133
Todd, R., 1362
Tomich, J. M., 681
Tota, M. R., 745
Trojanowski, J. Q., 1570
Trump, B. F., 219
Tsai, J., 1288
Tsuchiya, N., 651
Tsui, F. W. L., 1226
Tsuji, T., 1362

Uknis, A. B., 446

Valera, A., 1067
Valverde, M. A., 509
van Berkel, W. J. H., 476
Van Damme, J., 453
Van den Berghe, G., 541
Van Der Plas, A., 441
Vanfleteren, J. R., 1355
Vanhoof, G., 736
Vayssiére, J-L., 1277
Veech, R. L., 651
Venkovi, P., 777
Vestri, S., 1220
Vile, R., 190
Villalobos, C., 815
Virmy, M. J., 504, 1500
Vinante, F., 81
Vincent, M-F., 541
Visa, J., 1067
Voelkel, N. F., 379

Walkinshaw, M. D., 63
Walters, T. J., 434
Wang, D., 359
Wang, J. Y., 516
Wang, L-C., 324
Wang, T., 351
Warren, J. B., 411
Watson, C. S., 404
Webber, E. M., 1527
Weber, L. A., 1079
Weiler, S., 681
Weiner, S., 262
Weir, E. K., 183
Westcott, J. Y., 379
Wetterhahn, K. E., 1643, 1649
Whanger, P. D., 392
Whelan, W. J., 295, 699, 1126, 1389
Whitley, M. Z., 899
Whitlow, M., 73
Williams, C. H., Jr., 1267
Wise, J. P., Sr., 1643
Wlodawer, A., 50
Wong, D. T. W., 1362
Wong, P. K. Y., 1147
Woodman, R. C., 1103
Woolley, M., 159
Wormald, M., 453
Wright, P. E., 37
Wright, P. S., 279
Wrobel, S., 1247
Wu, S. Y., 1085
Wüthrich, K., 63

Xie, J., 253
Xu, H., 1632

Yamamura, H. I., 516
Yang, V. C., 1211
Yeh, J-Y., 392
Yildirim, Z., 1096
Yilmaz, S., 1336
Yoder, M. D., 335
Young, A. C. M., 26
Yuhasz, S. C., 43

Zaman, G., 1614
Zamzami, N., 1277
Zancuoghi, G., 81
Zeng, L., 1473
Zlatanova, J., 777
Zwickel, J., 127
Zwirner, N. W., 1482